1. In the fabrication of organic thin film semiconductor devices wherein there is an n-channel having contacts separated by said n-channel, the improvement for producing high electron mobility in said n-channel without treatment of the interface between said contacts and said organic thin film,

the improvement wherein said organic thin film is of a perylene tetracarboxylic acid diimide compound.

2. The improvement of Claim 1 wherein:

said compound has a perylene 3,4,9,10 tetracarboxylic acid diimide structure.

3. The improvement of Claim 2 wherein:

said compound comprises a perylene 3,4,9,10 tetracarboxylic acid diimide structure in which substituents attached to imide nitrogens in said diimide structure comprise at least one of atom chains taken from the group of,

linear alkyl chains, branched alkyl chains,electron deficient alkyl groups, electron deficient benzyl groups, chains having a length of four to eighteen atoms, and chains having a length of eight atoms.

4. The improvement of Claim 3 wherein:

said compound is taken from the group of,

a perylene 3,4,9,10 tetracarboxylic acid diimide,

heterocyclic variations of said 3,4,9,10 perylene tetracarboxylic acid diimide,

N,N"dialkyl perylene 3,4,9,10 tetracarboxylic acid diimide in which alkyl chain length

is from four to eighteen carbon atoms, and,

N,N"di(n-octyl)alkyl perylene- 3,4,9,10- tetracarboxylic acid diimide.

5. The improvement of Claim 4 wherein said N,N"di(n-octyl)alkyl perylene-3,4,9,10- tetracarboxylic acid diimide is N,N'-di(n-1H, 1 H-perfluorooctyl) perylene-3,4,9,10- tetracarboxylic acid diimide.

6. The process for fabricating a semiconductor device having an n-channel semiconducting film with external contacts separated by said channel, said device exhibiting a field effect electron mobility greater than 0.01 cm^2/Vs without prior treatment of said contacts, comprising the steps of:

depositing onto a substrate as said n-channel semiconducting film,

a layer comprising a perylene tetracarboxylic acid diimide compound by sublimation, said layer being formed on said substrate at a substrate temperature of less than 100 degrees C. during said sublimation.

7. The process of claim 6 wherein said semiconductor film is a layer of a perylene 3,4,9,10 tetracarboxylic acid diimide in which substituents attached to imide nitrogens in said diimide structure

comprise at least one of atom chains taken from the group of,

linear alkyl chains, branched alkyl chains,electron deficient alkyl groups, electron deficient benzyl groups, chains having a length of four to eighteen atoms, and chains having a length of eight atoms.

8. The process of Claim 7 wherein the material of said semiconductor film is selected from the group of,

perylene 3,4,9,10 tetracarboxylic acid diimide,

heterocyclic variations of said 3,4,9,10 perylene tetracarboxylic acid diimide,

N,N"dialkyl perylene 3,4,9,10 tetracarboxylic acid diimide in which alkyl chain length is from four to eighteen carbon atoms, and,

N,N"di(n-octyl)alkyl perylene- 3,4,9,10- tetracarboxylic acid diimide.

9. The process of Claim 8 wherein said N,N"di(n-octyl)alkyl perylene-3,4,9,10- tetracarboxylic acid diimide is N,N'-di(n-1H, 1 H-perfluorooctyl) perylene-3,4,9,10- tetracarboxylic acid diimide.

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